



## Preliminary Ecological Appraisal (PEA)



Maltsters  
Trevanson  
Wadebridge  
PL27 7HP

GR: SW 97922 72944

February 2023

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## 1. Contract Details

<b>Preliminary Ecological Appraisal: Extended Phase 1 Ecology Survey</b>	
<b>Grid Reference:</b>	SW 97922 72944
<b>Client:</b>	Adrian Daw
<b>Architect/Planning Consultant:</b>	Creative Planning (SW) Limited
<b>Date of Survey:</b>	12/01/2023
<b>Date of Report:</b>	06/02/2023
<b>Report Reference:</b>	PEA_Maltsters_Daw_February2023
<b>Associated Reports Reference:</b>	n/a
<b>Workflow Number</b>	PEA2023007
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### Declaration of Compliance

#### BS 42020:2013

This study has been undertaken in accordance with British Standard 42020:2013 Biodiversity, Code of practice for planning and development, unless specifically stated otherwise.

#### Code of Professional Conduct

The information which we have prepared is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

#### Validity of Survey Data and Report

The findings of this report are valid for 12 months from the date of survey, unless the site has been maintained in exactly the same condition, in which case the report can be considered valid for 24 months. Please be aware that some Local Planning Authorities (LPAs) require an update once 12 months has elapsed. If work has not commenced within this period, an updated survey by a suitably qualified ecologist may be required.

## **Legal and Moral Constraints and Responsibilities Summary**

An overview of relevant legislation and responsibility is given within the Appendices: Planning Policy and Legislation. Constraints exist for development where specific habitats or species are, or are potentially, within or adjoining a site proposed for development. Therefore, avoidance, mitigation, compensation and enhancement for a site will apply.

In all instances where Mitigation is given, also refer to:

- Any further survey work for protected species (Phase 2 Surveys) recommended, or their results.
- General Good Practice during Construction Stage.
- Law and Legislation pertaining to specific species (plants and animals)
- Prevention of the spread of native and non-native invasive plants and animals.
- Avoidance of Wildlife Crime <http://www.nwcu.police.uk/>

Further advice if species are found onsite during development may be sought from Ecological Surveys Ltd (Tel: 01503 240846 or 07736 458609) or Natural England.

## **What is a Preliminary Ecological Appraisal (PEA)?**

Preliminary Ecological Appraisal (PEA) is the term used to describe a rapid assessment of the ecological features present, or potentially present, within a site and its surrounding area (the zone(s) of influence in relation to a specific project (usually a proposed development)). A PEA normally comprises a desk study and a walkover survey. It should be considered to be a simplified form of an ecological survey and assessment.

The key objectives of a PEA are to:

- identify the likely ecological constraints associated with a project;
- identify any mitigation measures likely to be required, following the 'Mitigation Hierarchy'
- identify any additional surveys that may be required to inform an Ecological Impact Assessment (EcIA) should one be required; and
- identify the opportunities offered by a project to deliver ecological enhancement.

[CIEEM, 2017a]

The primary audience for a PEA is the client or developer and relevant members of the project team, such as the architect, planning consultant and landscape architect. It is normally produced to inform a developer (or other client), and their design team, about the key ecological constraints and opportunities associated with a project, possible mitigation requirements and any detailed further surveys required to inform an Ecological Impact Assessment (EcIA).

Many PEAs are written in a form which might not be accepted by the LPA as it might lack sufficient detail. Our report is written in a manner to support smaller scale

developments, or developments taking place in locations which are not of high biodiversity value, without upgrading to a full EcIA.

Please Note: if the PEA reveals the presence of protected / priority species and / or habitats or the potential for the proposal to impact upon protected sites, it may be necessary to upgrade the PEA into an EcIA to ensure its acceptance by the LPA.

## 2. Non-technical Summary

<b>Proposed development:</b>	Construction of one residential building.
<b>Purpose of the report:</b>	To present the results of the Extended Phase 1 Habitat Survey undertaken at Maltsters, Trevanson, Wadebridge, hereafter referred to as 'the Site'; assess the impacts of the proposed development on the important ecological features identified; and detail applicable compensation, mitigation measures and biodiversity enhancements as appropriate.
<b>Is this PEA report considered sufficient on its own to submit with a planning application, or does it require upgrading to an Ecological Impact Assessment (EcIA)?</b>	This report is considered sufficient for the size and scale of predicted impacts as a result of the proposal.

<b>Further Survey Work</b>	- None required.
<b>Further Assessment or Mitigation Method Statements</b>	- None required
<b>Habitat Regulation Assessment (HRA) likely?</b>	- It is considered unlikely that an HRA will be requested by the Local Planning Authority (LPA) – albeit that this is not our decision to make.
<b>Important Ecological Features (IEFs)</b>	The presence of an IEF on site, or in a location which could potentially be impacted by the development or post development activities will need to be Mitigated for.
<b>IEF Designated sites</b>	<p><b>Onsite:</b></p> <ul style="list-style-type: none"> <li>- [Site is within Cornwall AONB]</li> </ul> <p><b>Offsite:</b></p> <ul style="list-style-type: none"> <li>- None</li> </ul>
<b>IEF Habitats</b>	<p><b>Onsite:</b></p> <ul style="list-style-type: none"> <li>- Dense scrub upon earth bank: for nesting birds, bats and West European hedgehog</li> <li>- Species-poor semi-improved grassland: potential to support West European hedgehog</li> <li>- Line of trees: for nesting birds</li> <li>- Free-standing trees: for nesting birds and bats</li> <li>- Species-poor hedge (non-native): for nesting birds</li> </ul>

<p><b>IEF Species</b></p>	<p><b>Offsite:</b></p> <ul style="list-style-type: none"> <li>- Line of trees: for nesting birds</li> <li>- Species-poor hedge: for nesting birds</li> <li>- Shed/playhouse: for nesting birds</li> </ul> <p><b>Onsite:</b></p> <ul style="list-style-type: none"> <li>- Bats: potential for foraging and commuting</li> <li>- West European hedgehog (<i>Erinaceus europaeus</i>): potentially</li> <li>- Nesting birds: potential in dense scrub, line of trees, free-standing trees and species-poor hedge</li> </ul> <p><b>Offsite:</b></p> <ul style="list-style-type: none"> <li>- European badger (<i>Meles meles</i>)</li> <li>- Eurasian otter (<i>Lutra lutra</i>)</li> </ul>
<p><b>Invasive Non-native Species (Schedule 9 species)</b> If present, you have a legal obligation to avoid spreading these plants into the wider environment</p>	<ul style="list-style-type: none"> <li>- <b>On site:</b> Montbretia (<i>Crocsmia x crocosmiiflora</i>)</li> <li>- <b>In the immediate vicinity:</b> Variegated yellow archangel (<i>Lamium galeobdolon ssp. argentatum</i>)</li> </ul>
<p><b>Avoidance Measures</b></p>	<p>You must avoid impacts to the following habitats:</p> <ul style="list-style-type: none"> <li>- Line of trees (which provides potential habitat for nesting birds and foraging and commuting bats)</li> <li>- Species-poor hedgerow (which provides potential habitat for nesting birds)</li> <li>- Free-standing trees (which provide potential habitat for nesting birds)</li> </ul>
<p><b>Mitigation Measures</b></p>	<ul style="list-style-type: none"> <li>- Habitats retained: Line of trees, species-poor hedgerow, strips of poor semi-improved grassland along the field boundaries, free-standing trees</li> <li>- Re-check of badger activity prior to groundworks commencing</li> <li>- Construction Exclusion Zones to protect the dense scrub upon earth bank, strips of poor semi-improved grassland, free-standing trees, species-poor hedgerow, and adjacent offsite species-poor hedgerow, line of trees, and poor semi-improved grassland</li> <li>- Removal of dense scrub outside bird nesting season</li> <li>- Creating hedgehog 'accesses' by raising fencing by 150mm off the ground or cutting a hole to permit hedgehog access (150mm X 150mm).</li> <li>- Artificial Lighting Strategy</li> <li>- Covered trenching and capped pipework</li> <li>- Removal of invasive, non-native species</li> </ul>



<p><b>Enhancement Measures</b></p> <p>The LPA have an obligation to ensure that all developments result in a 'net biodiversity gain'.</p> <p>Consequently, even if there are no perceived negative biodiversity impacts, you will still have to provide some form of biodiversity enhancement.</p>	<ul style="list-style-type: none"> <li>- General good practice during construction phase</li> <li>- Creation of species-rich hedgerow on a bank</li> <li>- The inclusion of one bird box, one bat tube and one solitary bee brick, built into the structure of the new dwelling</li> <li>- Landscaping to benefit wildlife</li> </ul>
<p><b>Landscape and Ecological Management Plan (LEMP)</b></p> <p>A LEMP clarifies the timings and process which must be followed to ensure the biodiversity protection and enhancement of the site, during and post-development, as well as landscape considerations.</p>	<ul style="list-style-type: none"> <li>- Not recommended for this site.</li> </ul>
<p><b>Important Advisory</b></p>	<p>Ensure all onsite contractors/personnel are familiar with this report (and any Phase 2 reports associated with this site) and able to act upon the law and legislation governing protection of species and habitats onsite and mitigation specifically pertaining to this site. Should protected species be discovered on site, all works in the vicinity must cease immediately and ecological advice sought urgently.</p>
<p><b>Other relevant information / advice</b></p>	<ul style="list-style-type: none"> <li>- The LPA should ensure that any mitigation and compensation measures identified in this report, together with enhancement recommendations are either 'conditioned' where appropriate, or that full permission is withheld pending the agreement of mitigation, compensation (where necessary) and enhancement measures.</li> </ul>

Any works which negatively impact the biodiversity of this site, post the results of this ecological survey being received verbally, or in writing, could constitute a Wildlife Crime ([Appendix F. Wildlife Crime; http://www.nwcu.police.uk/](http://www.nwcu.police.uk/)).

### **3. Introduction**

Ecological Surveys Ltd were commissioned to undertake a Preliminary Ecological Appraisal (PEA) to include the potential for legally protected and notable species of the Site, and to assess the potential impact of the development on the biodiversity of the Site and its immediate environs. Ecological Surveys Ltd has not been informed of any previous surveys undertaken on this site that need to inform this report.

Only habitats which are present on site or adjoining the site are included and no discussion is entered into regarding habitats which are not present.

#### **3.1 Survey Aims**

The survey and this report identify features of conservation importance that could constitute a constraint to the proposals for this Site. Where appropriate, recommendations for impact avoidance, mitigation and post-development enhancement are made to ensure compliance with wildlife legislation and relevant planning policy.

This survey has been prepared in accordance with the 'Guidelines for Preliminary Ecological Appraisal' produced by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017a).

#### **3.2 Site Location and Size**

The Site is situated in Wadebridge in north Cornwall, on the outskirts of a residential area. The Site location is given in Figure 3.1.

The Site comprises a grassland entrance track leading to one field which has been used as a garden for several years. The field is bounded by hedges, walls and a line of trees. The south-eastern, south-western and north-western boundaries of the site back onto residential gardens, with rural fields beyond the north-eastern boundary. The wider landscape comprises a network of fields, hedgerows, woodlands and waterways, with the River Camel located 500m to the north-east of the Site.

The area surveyed is approximately 0.2ha in extent.

#### **3.3 Proposed Development**

The proposed development comprises the construction of one residential building at the north-eastern end of the field. Detailed development plans are not currently known.

**Figure 3.1 Location of Proposed Development**



**Location of the site**



**Wider landscape location to put site in context**

## 4. Methodology

This Preliminary Ecological Appraisal encompasses the establishment of the ecological baseline by undertaking a desktop survey, drawing on existing information and data, and a field survey; initial evaluation of the impacts of the proposed development on the designated sites, habitats and species found both on the Site and in the immediate vicinity of the Site and the identification of measures to mitigate the impacts; and the identification of ways to enhance the biodiversity of the area.

### 4.1 Desktop Survey

A desk-top survey was undertaken, collating existing data for the following relating to both the Site itself and the area within a two-kilometre radius:

- Statutory and non-statutory wildlife and earth science sites
- BAP Priority Inventory Habitats
- Legally protected and nationally notable species

Websites were consulted (refer to [References](#)).

In light of the habitats present within the Site, a biological records search was not commissioned as it was not considered appropriate for the scale and probable impact of the proposed development.

### 4.2 Field Survey

A field survey was undertaken by Paul Diamond RHS Cert (Hort), BSc (Hons), MSc, MCIEEM, MArborA Licentiate Member of the Landscape Institute on 12<sup>th</sup> January 2023 and the weather was clear and dry.

The field survey included carrying out an Extended Phase 1 Habitat Survey, consisting of a walkover assessment of the Site using Phase 1 Habitat Survey methodology (JNCC, 2010, as amended by the Institute of Environmental Assessment (IEA, 1995)). This is a standard technique for classifying and mapping British habitats. All areas within the Site were surveyed, the main plant species recorded, and habitat type mapped. Indicators of ecological value were also noted, including the presence or signs of any legally protected or rare species.

Plant species were identified according to Stace (2019).

A search was also made to identify the presence of any invasive non-native species (particularly those listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended)), including Japanese knotweed (*Reynoutria japonica*) and Himalyan balsam (*Impatiens glandulifera*).

Any buildings onsite were assessed for their potential to support roosting bats (using the criteria set out in Appendix D). Buildings were examined both externally and internally to consider the potential and actual use by bats, as well as by nesting birds.

### 4.3 Survey Constraints

All areas of the Site were readily accessible, and the time spent on site was considered appropriate to obtain all the details required for each habitat and species to enable an assessment to be made. Although some plant species would not have been visible during

the survey period, the botanical diversity was considered sufficient to be able to classify and assess the habitats present, as well as their potential for supporting legally protected and notable species.

It should be noted that habitats, and the species they may support, change over time due to natural processes and because of human influence. In line with current guidelines, the survey on which this report is based is only valid for two years, after which time it will need updating. It being accepted that some LPAs now expect a survey to be updated after 12 months.

#### 4.4 Assessment

All ecological data and information gained through both the desktop survey and the survey work were evaluated. The important ecological features were then identified and evaluated against the potential impacts/effects that the proposed development may have on the ecology of the Site and surrounding area.

The biodiversity importance of each designated site, habitat and species is evaluated on a geographic scale: international, national, county and local.

Evaluation of designated sites considers their designation; their ecological and landscape relationship with the proposed site; and the species and/or habitat types for which the site was designated.

Evaluation of habitats considers their designation; their area, quality and viability; diversity and connectivity to the wider landscape; and structural diversity and species-richness.

Evaluation of species considers their designation, including legal protection and rarity.

When assessing the impact of the development and changes to the baseline conditions on site, predictions will be made which focus solely on the zone of influence whilst taking into consideration the lifespan of the development and the significant impacts as identified from the proposed work operations throughout the lifespan of the development.

The proposed development aims to firstly avoid and then mitigate against any potential effects/impacts on the local ecology/biodiversity, ensuring compliance with nature conservation legislation. It aims to achieve this by applying the mitigation hierarchy (as mentioned in Paragraph 175 of the National Planning Policy Framework and detailed in Paragraph: 018 Reference ID: 8-018-20140306 of National Planning Practice Guidance) as follows:

**Avoidance** – Significant harm to wildlife species and habitats should be avoided through design.

**Mitigation** – where significant harm cannot be wholly or partially avoided, it should be minimised by design, or by the use of effective mitigation measures that can be secured by, for example, conditions or planning obligations.

**Compensation** – where, despite whatever mitigation would be effective, there would still be significant residual harm, as a last resort, this should be properly compensated for by measures to provide for an equivalent value of biodiversity.

Appropriate measures to avoid and/or minimise the significant negative effects on the important ecological features have been identified. These mitigation measures aim firstly to avoid the overall effect/impact, or for those that cannot be avoided, reduce their overall effect value. It is not always possible to fully mitigate an adverse effect to neutral levels.

Under the National Planning Policy Framework, NPPF, (HM Government, 2021a) local planning policies and decisions should 'contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

[Taken from NPPF 2021, Section 15. Conserving and enhancing the natural environment, paragraph 174]

Thus, the mitigation hierarchy should be applied when considering the impacts of developments and local planning decisions on the natural environment, with the protection of important wildlife sites, habitats, species and ecosystem services; the avoidance of impacts, mitigating these impacts where appropriate, and then achieving biodiversity net gain through enhancements.

Section 15 of the NPPF 2021 goes on to state that 'when determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the

features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.'

[Taken from NPPF 2021, Section 15. Conserving and enhancing the natural environment, paragraph 180]

The aim of development should be to deliver biodiversity net gain on site as well as limiting damage to important ecological features. Using the information gained during the desktop survey and the Extended Phase 1 Habitat Survey, and the ecological requirements of habitats, species and local environmental conditions, biodiversity enhancements for the Site have been considered, providing opportunities to increase the diversity of habitats and species on site.

#### **4.5 Biodiversity Impact Assessment: Biodiversity Losses and Gains**

The biodiversity impact assessment calculations, to determine the biodiversity losses and gains associated with the proposed development can be undertaken using the Department for Environment, Food and Rural Affairs (Defra)/Natural England Biodiversity Metric 3.1. This metric uses habitat to describe biodiversity, which is converted into measurable 'biodiversity units' according to the area of each type of habitat. The metric scores different habitat types (e.g. woodland, grassland) according to their relative biodiversity value and adjusts this according to the condition and location of the habitat. Where new habitat is created or existing habitat is enhanced then the associated risks of doing so are factored into the metric.

The metric can be used as an auditing tool to quantify the biodiversity value of habitats on a patch of land and it can be used to calculate the losses and gains in biodiversity from actions such as development or from positive conservation management.

It should be noted that the metric for biodiversity offsetting only considers habitats, both those currently present on site and those proposed as mitigation and biodiversity enhancements for the proposed development. The metric does not take account of species onsite, or enhancements proposed to delivery biodiversity gain for species (except where they equate to gain in semi-natural habitats).

## 5. Results/Baseline Ecological Conditions

This section presents the findings from the site survey and desktop study. The information is presented in three distinct sections:

- Designated sites
- Habitats
- Species

### 5.1 Designated Sites

Designated sites of international, national and local importance are listed below, along with their approximate distance from the proposed development.

Designation	Name (if applicable)	Distance
<b>Statutory Sites</b>		
<b>Special Area of Conservation (SAC):</b>	None within 2km	n/a
<b>Special Protection Area (SPA):</b>	None within 2km	n/a
<b>RAMSAR:</b>	None within 2km	n/a
<b>World Heritage Site:</b>		
<b>Site of Special Scientific Interest (SSSI):</b>	Amble Marshes	1.2km to the north-east
<b>Areas of Outstanding Natural Beauty (AONB):</b>	Cornwall AONB	Site lies within this AONB
<b>National Nature Reserve (NNR):</b>	None within 2km	n/a
<b>Local Nature Reserve (LNR):</b>	None within 2km	n/a
<b>Non-statutory Sites</b>		
<b>County Wildlife Site (CWS):</b>	Camel Estuary Coronation Park and Valley Hawkes Wood Nanscow Wood	0.2km to the north-east 1.0km to the south-east 1.2km to the south-east 2.0km to the south
<b>County Geology Site (CGS):</b>	None within 2km	n/a

The Site lies within a SSSI Impact Risk Zone, but the type of development (residential development for a single building) does not require Natural England to be consulted.

The Site is not within a Zone of Influence of any European site. The River Camel SAC is the closest European site to the proposed development, being approximately 2.6km to the south-east at its nearest point. The proposed development also lies outside of the River Camel Catchment Area that drains into the River Camel SAC and therefore nutrient neutrality does not apply. A 'Habitats Regulations Assessment' (HRA) is therefore unlikely to be required on this site. Refer to [Appendix G. Habitats Regulation Assessment \(HRA\)](#) for details.

There is a Geological Roadside Verge Inventory site lying approximately 65m to the south of the Site, along the A39.



<b>Designated sites considered Important Ecological Features with respect to the proposed development:</b>	- None
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## 5.2 Habitats

This section details the habitats present on the Site and recorded during the Extended Phase 1 Habitat Survey, along with important habitats within the vicinity of the site. Figure 5.1 maps the Phase 1 habitats recorded onsite during the field survey and Table 5.1 summarises the area of each of these habitats.

**Table 5.1. Phase 1 habitats associated with the site, their extent and value in a geographical context.**

<b>Phase 1 habitat type</b>	<b>Area (ha) or length (km)</b>
Amenity grassland	0.034ha
Earth bank	0.010km
Dense scrub upon earth bank	0.002ha
Line of trees	0.023km
Poor semi-improved grassland	0.082ha
Species-poor hedge	0.021km

Figure 5.1 Extended Phase 1 Habitat Survey Map



**Dense Scrub Upon Earth Bank****Dense scrub upon an earth bank along the north-eastern site boundary**

<b>Onsite</b>	<p>The dense scrub onsite comprises bramble (<i>Rubus fruticosus</i> agg.), which is growing upon an earth bank at the northern end of the north-eastern site boundary.</p> <p>The scrub onsite provides habitat for potential protected species such as nesting birds, foraging and commuting bats and West European hedgehog (<i>Erinaceus europaeus</i>).</p>
<b>Area of dense scrub on site</b>	0.002ha
<b>Offsite</b>	Unknown.
<b>Legal Constraints</b>	The scrub offers habitat for protected species.
<b>Important Ecological Feature (IEF)</b>	Yes – for protected species
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	Mitigation measures put in place to avoid damage (see below).
<b>Mitigation Measures</b>	<p>Required as follows:</p> <ol style="list-style-type: none"> <li>1. Construction Exclusion Zone (CEZs) of a minimum width of 3m extending from the edge of this habitat</li> <li>2. Removal of dense scrub outside of the bird nesting season</li> <li>3. Artificial Lighting Strategy</li> </ol>
<b>Biodiversity Enhancement Measures</b>	<p>Required as follows:</p> <ol style="list-style-type: none"> <li>1. The dense scrub upon earth bank should be enhanced to form a species-rich hedgerow</li> </ol>

<b>Habitat loss/gain</b>	Loss of 0.002ha of dense scrub but gain of 0.015km of hedge
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### Earth Bank



#### Earth bank forming part of the north-eastern field boundary

<b>Onsite</b>	Garden waste has been placed on the earth bank, which is situated along the north-eastern boundary of the field on site. An invasive non-native species, montbretia ( <i>Crocasmia x crocosmiiflora</i> ), was recorded upon this bank during the Extended Phase 1 Habitat Survey.
<b>Length of earth bank on site</b>	0.010ha
<b>Offsite</b>	There is an earth bank at the opposite end of the field, offsite.
<b>Legal Constraints</b>	No
<b>Important Ecological Feature (IEF)</b>	No
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	None required.
<b>Mitigation Measures</b>	Required as follows: 1. Removal of invasive non-native species (montbretia)
<b>Biodiversity Enhancement Measures</b>	Required as follows: 1. The earth bank should be planted to create a species-rich hedgerow on a bank
<b>Habitat loss/gain</b>	Loss of 0.010km of earth bank, gain of 0.010km of hedge

## Poor Semi-improved Grassland



### Poor semi-improved grassland on site

<b>Onsite</b>	<p>The poor semi-improved grassland is the dominant habitat on site, covering the field both onsite and adjacent offsite. The grassland is regularly mown and species composition is poor. Fescue (<i>Festuca</i> spp.), creeping bent (<i>Agrostis stolonifera</i>) and common bent (<i>A. capillaris</i>) are dominant, with some creeping buttercup (<i>Ranunculus repens</i>) and broad-leaved dock (<i>Rumex obtusifolius</i>) also present. Along the boundaries, dove's-foot crane's-bill (<i>Geranium molle</i>), common nettle (<i>Urtica dioica</i>), lords-and-ladies (<i>Arum maculatum</i>) and ivy (<i>Hedera</i> spp.) are found.</p> <p>The species-poor grassland has limited potential to support West European hedgehog (<i>Erinaceus europaeus</i>) – foraging.</p>
<b>Area of poor semi-improved grassland on site</b>	0.082ha
<b>Offsite</b>	<p>The adjacent offsite part of the field comprises similar poor semi-improved grassland, which also offers potential habitat for foraging West European hedgehog.</p> <p>Two areas of coastal and floodplain grazing marsh (designated as Habitats of Principal Importance under the NERC Act 2006) lie within 2km of the site, the nearest being 1.4km to the north-east.</p>
<b>Legal Constraints</b>	None
<b>Important Ecological Feature (IEF)</b>	Yes – for protected species
<b>Further Survey Work</b>	Phase 2 survey not required.

<b>Avoidance Measures</b>	Mitigation measures must be put in place to avoid damage (see below).
<b>Mitigation Measures</b>	Required as follows:  1. Construction Exclusion Zones (CEZs) of a minimum width of 3m extending from the earth bank, dense scrub and species-poor hedgerow, a minimum width of 4m extending from the line of trees, and along the south-western site boundary within the field to protect the offsite adjacent grassland  2. Covered trenching and capped pipework at night
<b>Biodiversity Enhancement Measures</b>	Not required.
<b>Habitat loss/gain</b>	Loss of 0.072ha but some replaced by vegetated garden

### Amenity Grassland





#### On site entrance to the field, comprising amenity grassland

<b>Onsite</b>	The entrance to the site comprises amenity grassland of a short sward height due to regular mowing.  This amenity grassland is of limited importance for animal species due to regular mowing
<b>Area of amenity grassland on site</b>	0.034ha
<b>Offsite</b>	The adjacent gardens comprise similar amenity grassland.
<b>Legal Constraints</b>	None

<b>Important Ecological Feature (IEF)</b>	No
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	None required.
<b>Mitigation Measures</b>	Not required.
<b>Biodiversity Enhancement Measures</b>	Not required.
<b>Habitat loss/gain</b>	Likely loss of 0.034ha but gain of 0.044ha as vegetated garden

### Line of Trees

			
<b>Line of trees along the north-western boundary of the field onsite</b>		<b>Line of trees in the north-eastern corner of the site</b>	
<b>Onsite</b>	A line of trees forms the north-western boundary of the field, and the northernmost section of the north-eastern field boundary. Species comprise Leyland cypress ( <i>Cupressus × leylandii</i> ) and ash ( <i>Fraxinus excelsior</i> ).		
<b>Length of line of trees on site</b>	0.023km		
<b>Offsite</b>	<p>The line of trees continues offsite, forming the rest of the north-western field boundary.</p> <p>There is a row of pollarded ash (<i>Fraxinus excelsior</i>) trees adjacent to the species-poor hedge along the south-eastern field boundary.</p> <p>Trees are a feature of the wider surrounding landscape. Woodlands designated as Habitats of Principal Importance/Priority Habitats under the NERC Act 2006 lie</p>		

	within a 2km radius of the proposed development site. Several of these are lowland mixed deciduous woodlands, the nearest being 0.1km to the west of the site. Ancient woodland lies 1.8km to the south, and one traditional orchard is located 1.5km to the north-west of the site.
<b>Legal Constraints</b>	The line of trees offer potential habitat for protected species such as nesting birds and foraging and commuting bats.
<b>Important Ecological Feature (IEF)</b>	Yes – for protected species
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	Line of trees on site must be retained and mitigation measures put in place to avoid damage (see below).
<b>Mitigation Measures</b>	Required as follows:  1. Construction Exclusion Zones (CEZs) of a minimum width of 4m extending from the edge of this habitat  2. Artificial Lighting Strategy
<b>Biodiversity Enhancement Measures</b>	Not required.
<b>Habitat loss/gain</b>	0km

### Trees (free-standing)



**Trees adjacent to Leyland cypress (*Cupressus × leylandii*) hedge on site**

<b>Onsite</b>	There are two free-standing trees adjacent to the species-poor hedge along the south-eastern field boundary on site; one is an ash ( <i>Fraxinus excelsior</i> ) and the other could not be identified.
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	The trees onsite are important for several animal species and provide habitat for potential protected species such as nesting birds.
<b>Area of individual tree cover on site</b>	0.004ha
<b>Offsite</b>	Unknown.
<b>Legal Constraints</b>	The free-standing trees onsite and adjacent offsite offer habitat for protected species such as nesting birds.
<b>Important Ecological Feature (IEF)</b>	Yes – for nesting birds
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	All trees on site must be retained and mitigation measures put in place to avoid damage (see below).
<b>Mitigation Measures</b>	Required as follows:  1. Construction Exclusion Zones (CEZs) of a minimum width of 4m extending from the edge of each tree trunk
<b>Biodiversity Enhancement Measures</b>	Not required
<b>Habitat loss/gain</b>	0ha

### Species-poor Hedge



**Leyland cypress hedge onsite**



**Wilson's honeysuckle hedge offsite**

<b>Onsite</b>	<p>The onsite section of the hedge comprises Leyland cypress (<i>Cupressus × leylandii</i>), and the western end, which is offsite, Wilson's honeysuckle (<i>Lonicera nitida</i>).</p> <p>The species-poor non-native hedgerow onsite provides potential habitat for protected species such as nesting birds.</p>
<b>Length of hedgerow on site</b>	Intact species-poor (non-native) hedgerow: 0.021km
<b>Offsite</b>	<p>The species-poor hedgerow which continues offsite provides potential habitat for protected species such as nesting birds.</p> <p>The hedge forming the south-eastern field boundary is a defunct species-poor hedgerow; variegated yellow archangel (<i>Lamium galeobdolon ssp. argentatum</i>) is present at the base of this hedge, in the western corner of the field.</p>
<b>Legal Constraints</b>	The hedgerows offer habitat for protected species.
<b>Important Ecological Feature (IEF)</b>	Yes – for protected species
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	All hedgerows must be retained and mitigation measures put in place to avoid damage (see below).
<b>Mitigation Measures</b>	<p>Required as follows:</p> <ol style="list-style-type: none"> <li>1. Construction Exclusion Zones (CEZs) of a minimum width of 3m extending from the edge of this habitat onsite, and along the south-western site boundary within the field to protect the offsite hedges</li> <li>2. Removal of invasive non-native species (variegated yellow archangel at the base of the defunct species-poor hedge offsite)</li> <li>3. Artificial Lighting Strategy</li> </ol>
<b>Biodiversity Enhancement Measures</b>	<p>Required as follows:</p> <ol style="list-style-type: none"> <li>1. Species-rich hedgerow creation along the north-eastern field boundary onsite</li> </ol>
<b>Habitat loss/gain</b>	No loss of species-poor hedge; gain of 0.025km of species-rich hedge

**Shed/Playhouse (offsite)****Exterior of shed/playhouse offsite****Blackbird nest on the shed/playhouse offsite**

<b>Onsite</b>	None
<b>Offsite</b>	This children's playhouse is situated in the north-western corner of the offsite part of the field. A blackbird ( <i>Turdus merula</i> ) nest was found upon the structure during the Extended Phase 1 Habitat Survey.
<b>Legal Constraints</b>	The shed/playhouse offsite provides potential habitat for protected species (nesting birds).
<b>Important Ecological Feature (IEF)</b>	Yes – for protected species
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	The children's playhouse must be retained and mitigation measures put in place to avoid damage (see below).
<b>Mitigation Measures</b>	Required as follows:  1. Construction Exclusion Zone (CEZ) along the south-western site boundary within the field
<b>Biodiversity Enhancement Measures</b>	Not required.
<b>Habitat loss/gain</b>	n/a

**Other Habitats**

Additional Habitats of Principal Importance/Priority Habitats under the NERC Act 2006 lie within a 2km radius of the proposed development site. Mudflats lie 0.5km to the north-east

of the site, with coastal saltmarsh 0.4km to the north-east. There is one saline lagoon 1.8km to the north-west, and lowland fens 1.2km to the north-east of the site.

### 5.3 Species

This section includes details concerning the species recorded on site during the Extended Phase 1 Habitat Survey, as well as legally protected and/or notable species recorded within a 2km radius of the development site. The potential for the presence of legally protected and/or notable species on site has also been included, based on the habitats recorded on site and adjacent land.

Where there is no potential for a species or species group to be present within the site, they have been scoped out at this stage.

#### Bats

<b>Onsite</b>	<p>There are no trees present on site that have potential for roosting bats.</p> <p>The line of trees and dense scrub found within the Site provide opportunities for foraging and commuting bats, with connectivity out into the wider landscape via hedgerows to semi-natural habitat, including farmland and occasional narrow waterways.</p> <p>No bat species have been recorded on site since 2000.</p>
<b>Offsite</b>	<p>The area immediately surrounding the site is bisected with hedgerows and watercourses, providing commuting routes for bats across the landscape. There are also numerous woodlands connected by the hedgerow network, making the wider area suitable for commuting, foraging and roosting bats.</p> <p>All bat species are legally protected; the following bat species have been recorded within a 2km radius of the site since the year 2000: common pipistrelle (<i>Pipistrellus pipistrellus</i>) (Groves (ed.), (2013)), greater horseshoe bat (<i>Rhinolophus ferrumequinum</i>) and lesser horseshoe bat (<i>Rhinolophus hipposideros</i>) (granted European Protected Species applications obtained via <a href="http://www.magic.defra.go.uk">www.magic.defra.go.uk</a>).</p>
<b>Legal Constraints</b>	<p>The habitat has been assessed as capable of supporting protected bat species: - legal constraints apply: legal protection under The Conservation of Habitats and Species Regulations 2010, the Wildlife and Countryside Act 1981 (as amended) and the NERC Act 2006.</p>
<b>Important Ecological Feature (IEF)</b>	Yes
<b>Further Survey Work</b>	Phase 2 survey not required.

<b>Avoidance Measures</b>	All habitat on site with the potential to support legally protected and/or notable bat species must be retained and mitigation measures put in place to avoid damage (see below).
<b>Mitigation Measures</b>	Required as follows:  1. Construction Exclusion Zones (CEZs) of a minimum width of 3m extending from the edge of dense scrub, a minimum width of 4m extending from the line of trees, and along the south-western site boundary within the field to protect the offsite hedges and line of trees  2. Artificial Lighting Strategy
<b>Biodiversity Enhancement Measures</b>	Required as follows:  1. Species-rich hedge creation along the north-eastern field boundary  2. One bat tube built within the structure of the new property

#### European Badger (*Meles meles*)

<b>Onsite</b>	The poor semi-improved grassland and amenity grassland onsite provide potential habitat for foraging badgers.  No signs of badgers using the Site were recorded during the field survey.  European badger has not been recorded on site since 2000.
<b>Offsite</b>	European badger has been recorded within a 2km radius of the site since the year 2000 (Groves (ed.), (2013))
<b>Legal Constraints</b>	None
<b>Important Ecological Feature (IEF)</b>	Yes
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	None required.
<b>Mitigation Measures</b>	Required as follows:  1. Re-check of badger activity immediately prior to commencement of groundworks phase  2. Construction Exclusion Zones (CEZs) of a minimum width of 3m extending from the earth banks, dense scrub and species-poor hedgerow, a minimum width of 4m extending from the line of trees to retain strips of grassland along the field boundaries

	<p>onsite, and along the south-western site boundary within the field to protect the offsite adjacent grassland</p> <p>2. Artificial Lighting Strategy</p> <p>3. Covered trenching and capped pipework at night</p>
<b>Biodiversity Enhancement Measures</b>	Not required.

### Eurasian Otter (*Lutra lutra*)

<b>Onsite</b>	<p>No signs of Eurasian otter (<i>Lutra lutra</i>) using the Site were recorded during the field survey. No habitat onsite exists to support otter.</p> <p>Eurasian otter has not been recorded on site since 2000.</p>
<b>Offsite</b>	<p>The River Camel lies 500m to the north-east of the site. Otter is found in sections of this river further upstream, with these sections being a Special Area of Conservation, designated in part for the presence of otter – the closest part of the SAC is 2.6km to the south-east.</p> <p>Otter has been recorded within a 2km radius of the site since the year 2000 (Groves (ed.), (2013)).</p>
<b>Legal Constraints</b>	None
<b>Important Ecological Feature (IEF)</b>	Yes
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	Not required.
<b>Mitigation Measures</b>	Not required.
<b>Biodiversity Enhancement Measures</b>	Not required.

### Other mammals

<b>Onsite</b>	<p>The grassland and dense scrub onsite have the potential to support West European hedgehog (<i>Erinaceus europaeus</i>). No legally protected and/or notable mammal species (other than those mentioned in the preceding sections) have been recorded on site since 2000.</p>
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<b>Offsite</b>	<p>The adjacent offsite poor semi-improved grassland has the potential to support West European hedgehog.</p> <p>The following legally protected and/or notable mammal species (other than those mentioned in the preceding sections) have been recorded within a 2km radius of the Site since 2000: West European hedgehog (<i>Erinaceus europaeus</i>) (Groves (ed.), (2013)).</p>
<b>Legal Constraints</b>	The habitat has been assessed as capable of supporting protected mammal species: - legal constraints apply: legal protection under the Wildlife and Countryside Act 1981 (as amended) and the NERC Act 2006.
<b>Important Ecological Feature (IEF)</b>	Yes
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	Mitigation measures put in place to avoid damage (see below).
<b>Mitigation Measures</b>	<p>Required as follows:</p> <ol style="list-style-type: none"> <li>1. Construction Exclusion Zones (CEZs) of a minimum width of 3m extending from the earth banks, dense scrub and species-poor hedgerow, a minimum width of 4m extending from the line of trees, and along the south-western site boundary within the field to protect the offsite adjacent grassland</li> <li>2. Artificial Lighting Strategy</li> <li>3. Covered trenching and capped pipework at night</li> <li>4. Access for mammals across developed site</li> </ol>
<b>Biodiversity Enhancement Measures</b>	<p>Required as follows:</p> <ol style="list-style-type: none"> <li>1. Species-rich hedge creation</li> </ol>

## Birds

<b>Onsite</b>	<p>Habitats at this site are likely to support common and widespread birds.</p> <p>No legally protected and/or notable birds have been recorded on site and there are unlikely to be any present as the habitats are common and are therefore unlikely to support such bird species.</p> <p>However, all bird species are protected whilst nesting, breeding and rearing young. The dense scrub, line of trees, species-poor hedgerow and free-standing trees onsite are likely to support nesting birds.</p>
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<b>Offsite</b>	The shed/playhouse, line of tree, free-standing trees and species-poor hedgerow offsite are likely to support nesting birds; indeed a blackbird nest was found on the shed/playhouse.
<b>Legal Constraints</b>	The habitat has been assessed as capable of supporting protected bird species: - legal constraints apply: legal protection under the Wildlife and Countryside Act 1981 (as amended) and the NERC Act 2006.
<b>Important Ecological Feature (IEF)</b>	Yes
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	All habitat on site that supports / with the potential to support legally protected and/or notable bird must be retained and mitigation measures put in place to avoid damage (see below).
<b>Mitigation Measures</b>	Required as follows:  1. Construction Exclusion Zones (CEZs) of a minimum width of 3m extending from the edge of species-poor hedgerow, dense scrub, of a minimum width of 4m extending from the edge of the onsite line of trees, and along the south-western site boundary within the field to protect the offsite hedges, line of trees and free-standing trees
<b>Biodiversity Enhancement Measures</b>	Required as follows:  1. Species-rich hedge creation along the north-eastern field boundary  2. Provision of one bird brick built within the structure of the new dwelling

### Invertebrates

<b>Onsite</b>	Habitats at this site are likely to support common and widespread invertebrates.  No legally protected and/or notable invertebrates have been recorded on site and there are unlikely to be any present as the habitats are common and are therefore unlikely to support such invertebrate species.
<b>Offsite</b>	Unknown.
<b>Legal Constraints</b>	None



<b>Important Ecological Feature (IEF)</b>	No
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	None required.
<b>Mitigation Measures</b>	Not required.
<b>Biodiversity Enhancement Measures</b>	Required as follows: 1. Provision of one bee brick built within the structure of the new dwelling

### Vascular Plants

<b>Onsite</b>	The site has a low floral diversity. A list of plants recorded on site during the Extended Phase 1 Habitat Survey is set out in Appendix A.  No legally protected and/or notable vascular plant species have been recorded on site and there are unlikely to be any present as the habitats present are common and therefore are unlikely to support such plant species.
<b>Offsite</b>	Unknown.
<b>Legal Constraints</b>	None
<b>Important Ecological Feature (IEF)</b>	No
<b>Further Survey Work</b>	Phase 2 survey not required.
<b>Avoidance Measures</b>	None required.
<b>Mitigation Measures</b>	Not required.
<b>Biodiversity Enhancement Measures</b>	Not required.

**Invasive Non-native Species**

**Montbretia growing atop the earth bank on site**

**Variegated yellow archangel at the base of the defunct species-poor hedgerow offsite**

<b>Onsite</b>	<p>Montbretia (<i>Crococsmia x crocosmiiflora</i>) was found during the survey, growing atop the earth bank on the north-eastern field boundary on site.</p> <p>This species is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). Section 14 of the Act prohibits the introduction into the wild of certain plant or animal species which may cause ecological or environmental harm; these species are those listed in Schedule 9. The legislation aims to prevent the planting of Schedule 9 listed plant material in the wild where it poses a threat to the native habitats and species.</p>
<b>Offsite</b>	<p>Variegated yellow archangel (<i>Lamium galeobdolon ssp. argentatum</i>) was found at the base of the defunct species-poor hedgerow offsite during the Extended Phase 1 Habitat Survey.</p>
<b>Legal Constraints</b>	<p>Invasive non-native species listed on Schedule 9 of the Wildlife &amp; Countryside Act 1981 (as amended) are present on site.</p>
<b>Important Ecological Feature (IEF)</b>	<p>No</p>
<b>Further Survey Work</b>	<p>Phase 2 survey not required.</p>
<b>Avoidance Measures</b>	<p>n/a</p>
<b>Mitigation Measures</b>	<p>Required as follows:</p> <ol style="list-style-type: none"> <li>1. Removal of invasive non-native species</li> </ol>
<b>Biodiversity Enhancement Measures</b>	<p>n/a</p>

## 6. Biodiversity Mitigation and Enhancement Details

The ecological mitigation measures and biodiversity enhancements required for the residential development at Maltsters have been listed in Section 5 above, against the particular habitat, species and species group for which they are required. This section provides the specific details for each of the mitigation measures and enhancements mentioned. These are mapped in the Ecological Constraints and Opportunities Plan (ECOP) set out in Appendix H at the end of this report.

Enhancement (measures that improve the biodiversity/ecological condition) of all sites post development is a planning requirement. The law, central government planning policy and local planning policy point towards the enhancement of a site's biodiversity as part of the development process.

Ecological enhancement measures must be over and above any avoidance, mitigation and compensation measures required to neutralise the impacts of the development on wildlife. An increased need for effective Enhancement has been reinforced by recent research conducted by a United Nations-backed panel called the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) stating up to million plant and animal species face extinction. Whilst we in the UK are not directly responsible for all of this loss, we can try to protect the threatened species within the UK.

Consequently, enhancement requirements within this report should be seen as the minimum expectations and we would urge all clients to carefully consider how they are able to make positive contributions to protecting and enhancing our natural environment within their planning submissions.

The implementation of the mitigation and biodiversity enhancement measures should be overseen by an Ecological Clerk of Works or a suitably experienced ecologist.

### Re-check of Badger Activity

A re-check of badger activity will be undertaken on the site immediately prior to development work commencing (no more than 28 days before commencement). This is primarily to identifying any new setts or areas of badger activity within the site, due to badgers being recorded in the area within the recent past.

### Removal of Invasive, Non-native Species

Montbretia and variegated yellow archangel, invasive, non-native species listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) were found to be present; the montbretia onsite, and the variegated yellow archangel offsite on land also owned by the client. These species should be removed and disposed of responsibly.

- ✓ Prevent invasive non-native plants on development land managed during this time from spreading into the wild or a neighbour's property and causing a nuisance; these species should ideally be removed by hand. Refer Appendix B.
- ✓ Restrictions apply to mulching and earth moving which may cause the spread of invasive non-native plants and animals.

- ✓ Restrictions apply to activities that cause the spread of non-native animals into the wild.

### **Removal of dense scrub (bramble)**

Removal of the bramble (dense scrub) along the northern section of the earth bank should be done outside of the bird nesting season of March – September (inclusive). If removal is not possible during this period, careful checks of the scrub to ensure no bird nesting is taking place must be conducted by a suitably experienced ecologist prior to works commencing. If breeding birds are found or suspected, clearance work will not be permitted until an ecologist is satisfied that breeding is complete, which may be as late as August or September.

### **Construction Exclusion Zones**

Areas that are being retained should be protected from damage during the groundworks and construction phase of the development by erecting Heras (or similar) fencing around these features. Construction Exclusion Zones (CEZs) should therefore be set up as follows: a minimum width of 3m extending from the earth banks, dense scrub and species-poor hedgerow, a minimum width of 4m extending from the line of trees, and along the section of the south-western site boundary within the field.

Construction Exclusion Zones reflecting the Root Protection Area (RPA) of individual standard trees will be put in place. RPAs are calculated as an area equivalent to a circle with a radius 12 times the stem diameter of the tree. RPAs are capped at 707m<sup>2</sup>, represented by circle with a radius of 15m where the tree is at the centre. Therefore, a CEZ set at a distance of 4m from each of the two free-standing trees will ensure roots are protected.

Temporary fencing (Heras or similar) with appropriate signage will be erected at the appropriate distance(s) (as mentioned above). The only exception to this is at existing access points. Heras fencing is not intended to restrict the access of species to other areas of the site, therefore, mindful procedure by site workers and visitors to the site is always necessary.

No development work should be undertaken within the CEZs and no materials, machinery, chemicals etc. should be stored within these zones. No development or any associated works should be located within these Construction Exclusion Zones. Appropriate signs should be placed at regular intervals along the fencing to ensure everyone on site is aware of the CEZ and understands its relevance (for example CONSTRUCTION EXCLUSION ZONE – NO ACCESS).

Any areas proposed for planting post-development should also be fenced off where possible to prevent compaction of the soil through vehicle movements.

### **Covered Trenching and Capped Pipework**

Trenches or large excavations should be covered overnight to prevent wildlife such as badgers or hedgehogs falling in and failing to escape. If this is not possible then a strategically placed plank may provide a means of escape.

Any large bore pipes should be capped at the end of the day to reduce the potential for badgers and other wildlife entering and becoming trapped.

## Artificial Lighting Strategy

No external artificial lighting will be introduced to the site during the groundworks and construction phases of the development. External artificial lighting during the operational phase will comprise lights above external doors. External lighting must not be aimed towards the north-eastern or north-western field boundaries.

LED and/or low-pressure sodium lamps with glass glazing should be utilised instead of mercury or metal halide lamps. This type of lighting can be utilised more directionally and will reduce the range of light wavelengths emitted thus significantly reducing the levels of UV light which may attract increased levels of invertebrate bat prey items. Avoid artificial lights shining on known or potential bat roosts, their access points and their flight paths.

- Light ONLY when and where it is needed for health and safety.
- Prevent light-spill and spread: eliminate bare bulbs, upward pointing lights, keep light near to or below the horizontal. E.g. flat cut-off lanterns. Such light should be positioned to only illuminate the required areas, limiting light spill, both horizontally and vertically. Additionally, hoods, cowls, louvers and/or shields may be utilised to further direct any lighting.
- Decrease light intensity, avoid the UV spectrum: attracting insects is NOT an aim.
- When external lighting is needed for safety reasons, dynamic lighting schemes that are switched on only when needed should be considered. Dynamic lighting schemes are usually triggered via motion sensors by a pedestrian, bicyclist or cars.
- Timer switch on any proposed outdoor lighting to facilitate dark periods.
- Where planting to block lighting, use temporary fencing to shield light spill until vegetation has matured.

It is becoming increasingly common for LPAs to request an independent site lighting strategy and expect it to be submitted as early as the reserved matter stage. Consideration should be given to this prior to submission particularly on larger sites or those with important bat / dormouse habitat / corridors, rather than wait to be compelled to do so.

## Inter-property fences allowing wildlife access

Any fences onsite post-construction, including those between residential properties, will allow the movement of animals beneath them by being raised at least 150mm above ground level or having gaps 150mm x 150mm cut up from the base every 20m to allow animals through.

## Hedgerow Creation

A native species-rich hedgerow should be planted along the whole length of the earth bank, replacing the bramble scrub at the northern end.

- The hedgerow should be created from planting native species ideally of local provenance. Suggested species include hawthorn (*Crataegus monogyna*) for its flowers and berries; hazel (*Corylus avellana*) for its nuts and attracting insects; blackthorn (*Prunus spinosa*); pedunculate oak (*Quercus robur*); crab apple (*Malus sylvestris*); holly (*Ilex aquifolium*); elder (*Sambucus nigra*); wild privet (*Ligustrum vulgare*) and guelder-rose (*Viburnum opulus*).
- Use two-year-old pot grown shrubs planted in a double, staggered row at a rate of at least four plants per metre.

- Apply a layer mulch to a depth of 75mm around shrub base to suppress weeds.
- Spiral guards will be used to protect new shrubs from rabbits.
- Plan a monitoring programme during first year of growth. Any saplings which fail to thrive should be re-planted in order to prevent the development of gaps.
- Trim lightly during the first three years.
- Individual pedunculate oak trees within the hedge should be selected at intervals of approximately 20m to remain uncut, allowing these individuals to develop into mature trees to attract potential invertebrate prey species.
- Approximately three years following planting, an appropriate management scheme should be established to ensure that it develops into a dense hedgerow which is optimal for protected species.

### Bat Roosting Provision

One bat tube or bat box must be built into the structure of the new dwelling.

Bat tubes/boxes erected on properties offer potential bat roosts and augment the natural roosting opportunities. These tubes/boxes should be erected not less than 3m high and ideally 4m plus.

- Bat tubes must be built into the fabric of the building, ideally on the southern and western aspects, and not bolted on to the outside and are therefore only suited to structures, not trees. A choice of styles is sometimes available, and the most suitable style can be agreed with the LPA.
- Where bat-tubes are unsuited owing to the type of construction of the proposed structures, other bat boxes or specifically designed bat habitation of an equally durable condition may be substituted for bat-tubes (subject to LPA approval.)
- Where enhancement recommends bat tubes or bat boxes on structures, aspects of the Artificial Lighting Strategy must be followed to ensure artificial lighting does not shine on the access points /boxes or flight paths.



### Bird Nesting Provision

One bird brick must be built into the structure of the new dwelling.

In-built bird bricks provide a long-lasting solution. Fixing to trees or external wall mountings will only last as long as the nail / screw or branch lasts. Often this is less than ten years. Built in features are likely to last as long as the structure they are built into which might be hundreds of years. Obviously, there may be occasions where built in solutions are not applicable. LPA approval of external mounted boxes is generally required.

- Only boxes of robust or permanent construction are suitable. Some account must be taken of the potential need to maintain and replace boxes after a number of years in use.
- Boxes/bricks should be positioned with orientation preferably between north and east with external positions of not less than 3m high to avoid cat predation and vandalism.
- Site nest boxes in locations that are accessible for maintenance, but away from bird feeders. Ideally boxes should be a discrete distance away from other nest boxes, except for house sparrows, as they like to nest in colonies.

		
<p><b>Bird brick 24,25,26 to suit varying bird sizes</b></p>	<p><b>Swallow</b></p>	<p><b>Swift</b></p>

### **Solitary Bee Provision**

One solitary bee brick must be built into the structure of the new dwelling. Solitary bee bricks can be built into buildings, walls and other structures. Each bee brick provides multiple cavities for solitary bees to lay their eggs. The bricks should ideally be built into south-facing, sunny walls, at between one and two metres above ground level and with nectar sources nearby.

### **General Good Practice for Construction Sites**

All activities on site should bear in mind the potential for wildlife or the environment being harmed through the process of development from inception to end, with a proactive approach occurring for lawful protection of wildlife and the environment regarding use of materials, machines, chemicals, and human activity on site.

- ✓ Contractors must ensure that no harm can come to wildlife by maintaining the site efficiently, clearing away any material such as wire in which animals can become entangled and preventing access to toxic substances.
- ✓ Any large bore pipes should be capped at the end of the day to reduce the potential for badgers and other wildlife entering and becoming trapped.
- ✓ If there is a substantial delay before development commences, the site should be maintained in a way that would prevent wildlife colonising it and causing constraints

in the future. Such management should include mowing grassland at least twice a year and preventing scrub encroachment.

- ✓ Piles of brush wood and or log piles should be carefully inspected for signs of wildlife prior to their removal. This is especially crucial during the period March – September (inclusive) as some species of bird choose such sites to construct their nests. Ideally removal of such features should be done outside of the nesting season. If this is not possible, it is recommended that these features are covered in such a way as to exclude / prevent birds and / or reptiles taking up residence. If nesting birds or reptiles are discovered, work must cease immediately, and ecological advice sought.
- ✓ Erection of signage to inform of any Health and Safety considerations during development and post development for the benefit of residents.
- ✓ If any species is discovered during any stage of the works, any vegetation, materials etc. should be replaced to re-establish a level of cover allowing the animal to move away of its own accord. If required, further advice should be sought from Ecological Surveys Ltd (Tel: 01503 240846 or 07736 458609) or Natural England.

### **Landscaping for the Benefit of Wildlife**

Landscaping in sympathy with the needs of native wildlife is relevant to all important wildlife species. It helps to support birds by providing plant species which carry seeds, fruits, nuts, and/or support insects (nectar and pollen) upon which birds feed and supports bats by attracting insects to the garden.

The list below is not exhaustive, neither is it prescriptive, and recommendations in italics can be applied with discretion. The implementation of a combination of recommendations here fulfils the obligation of the client/agent to leave the site in an enhanced state.

- ✓ The landscape architect/or appointed person should plant a variety of flowering plants, biased towards native and near-native species. Exotics are not required; however, a selection of exotics to extend the flowering season and potentially provide resources for specialist groups now and in the future, is becoming increasingly important owing to climatic changes, and should be given serious consideration by any with a view to protecting and sustaining present and future biodiversity. Plant holistically for biodiversity value: nectar rich plants/shrubs which yield fruits /nuts of benefit to a multitude of species.
- ✓ Where grass is planted, use a grass mix other than low amenity lawn grass. Plant mixes with diverse grass species support a wealth of insects when allowed to seed and flower before being cut back.
- ✓ Provide green corridors (hedges/trees/water features/lawns or mixed diversity species and beds) with attention to other neighbouring green spaces. The garden itself, when taken as one of many within the neighbourhood, will become part of a wider green corridor.
- ✓ Select a variety of plants that will produce foods in different seasons. For winter residents as well as migrants that return early in spring, plants that hold their fruits throughout the winter ("winter-persistent" plants) are a vital food source.
- ✓ Leaving rough areas of vegetation, native trees and shrubs around the vicinity of any replacement buildings will also maintain nesting opportunities.



- ✓ Avoid pesticide and insecticide use.
- ✓ For garden areas: improve the area of green habitat within the garden wherever feasible and where paved spaces and balconies must be used also consider:
  - Planters and raised beds
  - Courtyard trees, low level shrubs, hedges
  - Planting climbers and creepers.
- Include features such as bird tables and feeders raised up or protected at the base from squirrel or cat ascent.
- Provide shelter using low shrubs, thickets or hedges where birds can nest, perch, and escape from predators.
- Leave tree stumps, dead wood (where safe to do so) tree limbs, leaf piles and compost to encourage insects and worms for birds to feed on.
- Keep a lid on any water butts.
- Appropriate aftercare and management should ensure that these areas are maintained to give optimum benefit to wildlife.

## 7. Biodiversity Impact Assessment: Losses and Gains

The proposed development is classed as a minor development and therefore, at the present time, there is no requirement for the Department for Environment, Food and Rural Affairs (Defra)/Natural England Biodiversity Metric 3.1 to be used to calculate the biodiversity losses and gains associated with the development – a 10% biodiversity net gain (BNG) is not required. However, in line with the *National Planning Policy Framework 2021*, which requires that all development must provide BNG throughout the development process, Table 7.1 shows the losses and gains for the habitats on site if the proposed development goes ahead.

Due to lack of a detailed proposal, assumptions have been made when calculating the losses and gains for this site. It has been assumed that the amenity grassland and some of the poor semi-improved grassland will be replaced with hardstanding to form an entrance road and driveway, strips of grassland will be retained along the field boundaries on site, with the remaining poor semi-improved grassland replaced with vegetated garden. The earth bank forming the north-eastern boundary of the field will be enhanced to create a new native species-rich hedge.

**Table 7.1. Habitat losses and gains for the proposed development at this site**

Habitat	Area (ha) / length (km) lost	Area (ha) / length (km) gained	Overall biodiversity gain
Amenity grassland	0.034ha	0ha	Loss of 0.034ha
Dense scrub	0.002ha	0	Loss of 0.002ha
Earth bank	0.010km	0	Loss of 0.010km
Poor semi-improved grassland	0.072ha	0	Loss of 0.072ha
Line of trees	0	0	Line of trees to be retained
Species-poor hedge	0	0	Species-poor hedge to be retained
Dwelling	0	0.015ha	Gain of 0.015ha
Native species-rich hedge	0	0.025km	Gain of 0.025km
Hardstanding	0	0.048ha	Gain of 0.048ha
Vegetated garden	0	0.044ha	Gain of 0.044ha

## 8. Conclusions

The proposed residential development site is considered to be of low ecological value due to the habitats present.

The Extended Phase 1 Habitat Survey that was undertaken on 12/01/2023, along with the desktop survey, are considered to have collected enough information about the ecological condition of the site to have been able to adequately assess the impact of the proposed development. Further survey work is therefore not required.

Mitigation measures have been set out to avoid and reduce the effects/impacts of the development on the important ecological features and the local environment as a whole. These include Construction Exclusion Zone, artificial lighting strategy, removal of invasive non-native species, covered trenching and capped pipework at night, and access for mammals across the developed site, and all measures should be included as a planning condition for the proposed development.

Enhancement measures for biodiversity have also been set out, including the creation of a native species-rich hedge, and the provision of one bat tube, one bird brick and one bee brick within the structure of the new dwelling. These enhancements should be included as a planning condition for the proposed development.

Providing the recommendations within this report are adhered to, with the mitigation measures and enhancements agreed, there would appear to be no ecological constraints to prevent this development. The local planning authority (LPA) should ensure that the mitigation measures, together with enhancement recommendations, are either 'conditioned' where appropriate, or that full permission is withheld pending the agreement of mitigation, compensation (where necessary) and enhancement measures.

If the recommendations within this PEA report are adhered to, it is envisaged that there will be an overall net loss in biodiversity within the proposed development site, due to grassland being replaced with hardstanding and a dwelling. If the recommendation for a new native species-rich hedge along the north-eastern field boundary is taken there will be an increase in hedgerow biodiversity.

It is the responsibility of all those involved with the proposed development works at Maltsters to ensure that wildlife protection and nature conservation legislation is complied with throughout the lifespan of the development, at every stage. Although no current evidence of protected species was found on site it cannot be assumed that they are not present when the development work commences. Care should therefore be taken during all stages of the development and if any protected are discovered they must not be handled; works must stop immediately, and advice sought from a licensed ecologist.

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- National Biodiversity Network Atlas: [www.nbnatlas.org](http://www.nbnatlas.org)
- Prevent the spread of harmful invasive plants: [www.gov.uk/prevent-the-spread-of-harmful-invasive-and-non-native-plants](http://www.gov.uk/prevent-the-spread-of-harmful-invasive-and-non-native-plants)
- UK Biodiversity Action Plan: [www.ukbap.org.uk/NewPriorityList.aspx](http://www.ukbap.org.uk/NewPriorityList.aspx)

## 10. Appendices

### Appendix A. Flora Species Recorded Onsite During Extended Phase 1 Habitat Survey

Common Name	Scientific Name
Ash	<i>Fraxinus excelsior</i>
Bramble	<i>Rubus fruticosus</i> agg.
Broad-leaved dock	<i>Rumex obtusifolius</i>
Common bent	<i>Agrostis capillaris</i>
Common nettle	<i>Urtica dioica</i>
Creeping bent	<i>Agrostis stolonifera</i>
Creeping buttercup	<i>Ranunculus repens</i>
Dove's-foot crane's-bill	<i>Geranium molle</i>
Fescue	<i>Festuca</i> spp.
Holm oak	<i>Quercus ilex</i>
Ivy	<i>Hedera</i> spp.
Leyland cypress	<i>Cupressus</i> × <i>leylandii</i>
Lords-and-ladies	<i>Arum maculatum</i>
Montbretia	<i>Crocsmia</i> × <i>crocsmiiflora</i>
Russian comfrey	<i>Symphytum</i> × <i>uplandicum</i>
Variegated yellow archangel	<i>Lamium galeobdolon</i> ssp. <i>argentatum</i>

## Appendix B. Summary of the Legislation and Policy relating to Habitats and Species

### The Wildlife and Countryside Act (WCA) 1981 (as amended)

This Act is the primary legislation that protects animals, plants and certain habitats in the UK. It is the means by which the Bern Convention and the Birds Directive and Habitats Directive are implemented in Britain. Protected birds, animals and plants are listed in Schedules 1, 5 and 8 respectively of the Wildlife and Countryside Act.

**Schedule 1 Part 1** – Birds which are protected by special penalties at all times from being intentionally killed, injured, or taken and whose eggs, nests or dependent young are also protected from being disturbed.

**Schedule 5 Section 9 Part 1 (killing/injuring)** – Animals which are protected from being intentionally killed or injured.

**Schedule 5 Section 9 Part 1 (taking)** – Animals which are protected from being taken.

**Schedule 5 Section 9 Part 4a** – Animals which are protected from intentional damage to, destruction of, or obstruction of access to any structure or place used for shelter or protection.

**Schedule 5 Section 9 Part 4b** – Animals which are protected from intentional disturbance while occupying a structure or place used for shelter or protection.

**Schedule 5 Section 9 Part 4c** – Animals which are protected from their access to any structure or place which they use for shelter or protection being obstructed.

**Schedule 6** - Animals which are protected from being killed or taken by certain methods under Section 11(1). The methods listed are: self-locking snares, bows, crossbows, explosives (other than ammunition for a firearm), or live decoys.

**Schedule 8** – Plants and fungi which, subject to exceptions, are protected from: intentional picking, uprooting or destruction; selling, offering for sale, possessing or transporting for the purpose of sale; advertising for buying or selling.

**Schedule 9** – Plant and animal species that are prohibited from introducing into the wild as they may cause ecological or environmental harm or where they pose a threat to the native habitats and species. Under Schedule 9 of the Wildlife & Countryside Act 1981 (as amended) it is a criminal offence to cause any of 48 non-native plant species (6/4/2010) and (non-native animals) to spread into the wild where they cause damage to the environment/economy/health/lifestyle.

The site owner has a responsibility to:

- Prevent invasive, non-native plants on their land spreading into the wild and causing a nuisance.
- Prevent harmful weeds on their land spreading onto a neighbour's property

The owner of the site must not plant in the wild or cause certain invasive and non-native plants to grow in the wild. This can include moving contaminated soil or plant cuttings. If this occurs there is a fine or prison term for up to 2 years. The site owner is not legally obliged to remove these plants or to control them on site. However, at the point of change: **development, mulching, earth moving operations**: it is important that they are identified, and their spread controlled in the most appropriate way.

### Environmental Protection Act 1990

[Environmental Protection Act 1990](#) allows for the potential classification of soil and other waste containing viable propagules of invasive non-native plant species as controlled waste. This has been applied to Japanese Knotweed with the result that waste containing this species



must be disposed of in accordance with the duty of care set out in section 34 of the Act. The Environment Agency have issued guidance which will be of use in complying with the duty of care.

In addition:

- Any Schedule 9 plant material, or soil containing root or rhizome fragments, may be classified as 'controlled waste' under the Environmental Protection Act 1990 (EPA).
- In addition to a criminal prosecution under the Wildlife & Countryside Act, infringement of the EPA can result in an *unlimited fine*.
- The owner may also be held liable for costs incurred from the spread into adjacent properties and for disposal of contaminated soil off site during development, which later leads to the spread on another site.

### **Protection of Badgers Act 1992**

Both badgers and their setts are protected, making it illegal to kill, injure or take, possess or cruelly ill-treat badgers or to interfere with a badger sett (including blocking tunnels or damaging the sett in any way).

### **The Hedgerow Regulations 1997**

Any hedgerows classified as 'important' under the 1997 Hedgerows Regulations cannot be removed without a Hedgerow Removal Notice issued by the relevant Local Authority unless previously approved as part of a planning permission. The UK Biodiversity Action Plan (BAP) now classifies any native hedge over 20m in length as a priority habitat feature. Priority hedgerows should be those comprising 80% or more cover of any native tree/shrub species. The Local Authority is the arbiter as to classification of hedgerows.

### **The Countryside and Rights of Way (CRoW) Act 2000**

This Act increases measures for the management and protection for Sites of Special Scientific Interest (SSSI) and strengthens wildlife enforcement legislation.

### **Natural Environment and Rural Communities Act 2006**

The Act made amendments to the both the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way (CROW) Act 2000. For example, it extended the CROW biodiversity duty to public bodies and statutory undertakers. The Act also makes provisions in respect of pesticides harmful to wildlife, the protection of birds, and in respect of invasive non-native species, and also alters enforcement powers in connection with wildlife protection, and extends time limits for prosecuting certain wildlife offences.

Section 41 of the Act requires that the Secretary of State publishes a list of species of flora and fauna considered to be of principal importance for the purpose of conserving biodiversity in England. The list is intended to be used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006 'to have regard' to the conservation of biodiversity in England, when carrying out their normal functions.

The UK BAP list of 1149 species, published in 2007, was used to draw up a list of 938 species, also known as the 'England Biodiversity List', comprising those species found in England which have been identified as requiring action under the UK BAP. In addition, the Hen Harrier has also been included on the list because without continued conservation action it is unlikely that the Hen Harrier population will increase from its current very low levels in England.

The list of species of principal importance was first published in 2002 by DEFRA under Section 74 of the Countryside and Rights of Way (CROW) Act 2000, and was identical to the UK BAP list at that time. The CROW Act Section 74 list has now been replaced by the Section 41 list.

Sixty-five (65) habitats are listed as being of principal importance, in the Secretary of State's opinion, for the purposes of conserving biodiversity. Under section 41 (England) of the NERC Act (2006) there is a need for these habitats to be taken into consideration by a public body when performing any of its functions with a view to conserving biodiversity. These habitats are the subject of National and Local Biodiversity Action Plans.

### **The Anti-social Behaviour, Crime and Policing Act 2014**

[Anti-social Behaviour, Crime and Policing Act 2014](#) enables community protection notices to be served by local authorities or the Police against individuals who are acting unreasonably and who persistently or continually act in a way that has a detrimental effect on the quality of life of those in the locality. These powers are designed to be flexible and could be used to address specific problems caused by widespread species such as Japanese knotweed.

### **The Conservation of Habitats and Species Regulations 2017 (as amended)**

[The Conservation of Habitats and Species Regulations 2017](#) (and as amended by The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019)) originally transposed the Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora ("the Habitats Directive") and elements of Directive 2009/147/EC on the conservation of wild birds ("the Birds Directive") in England, Wales, and to limited extent, Scotland and Northern Ireland. The objective of the Regulations is to protect biodiversity through the conservation of natural habitats and species of wild fauna and flora. The Regulations set out the rules for the protection, management and exploitation of such habitats and species. They place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species. These sites are known generally as 'European sites' and in the UK form the national sites network (known in Europe as Natura 2000 sites). They include Special Areas of Conservation (SACs) and Special Protection Areas (SPAs).

### **Environment Act 2021**

The Environment Act 2021 received Royal Assent on 9 November 2021. It only applies to England. Key elements of the Act include:

- All new developments to deliver 10% increase in biodiversity (biodiversity net gains), to be managed for at least 30 years (reviewable by the Secretary of State), with a Biodiversity Gain Site Register to be implemented and maintained for at least 30 years after the site scheme has completed.
- Introduction of Local Nature Recovery Strategies (LNRSs) – new spatial strategies led by a "responsible authority" in each area. Statutory guidance to be given to Local Planning Authorities (LPAs) explaining how they should take account of the LNRSs.
- Introduction of a new Species Conservation Strategy which places a duty on LPAs to cooperate with Natural England and other LPAs etc. to safeguard the future of 'at risk' species.

- LPAs to produce Biodiversity Reports every five years, describing action taken and the impact it has had on local biodiversity.
- Establishment of the Office for Environmental Protection (OEP), a green 'watchdog' to ensure the enforcement of the environmental legislation in England and Northern Ireland.
- Introduction of the five Principles to which organisations must have regard:
  - (i) Integration (environmental protection should be integrated into the making of policies);
  - (ii) Prevention (preventative action should be taken to avert environmental damage);
  - (iii) Precautionary (a precautionary approach should be taken to the possibility of environmental harm);
  - (iv) Rectification At Source (where possible any environmental harm should be rectified at source);
  - (v) Polluter Pays (the person(s) who causes the harm must suffer the financial penalty both in terms of mitigation and compensation)
- Long-term (at least 15 years, starting in 2022) legally binding targets on air quality, biodiversity, water, resource efficiency and waste reduction.

### **Circular 06/2005 Biodiversity and geological conservation – statutory obligations and their impact within the planning system**

This circular provides administrative guidance on the application of the law relating to planning and nature conservation as it applies in England. It complements the national planning policy in the National Planning Policy Framework and the Planning Practice Guidance.

### **National Planning Policy Framework, 2021**

The National Planning Policy Framework (NPPF) sets out the Government's planning policies for England and how these are expected to be applied. It contains a number of policies relating to ecology including "minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures". Under NPPF, local planning authorities have an obligation to promote the preservation, restoration and recreation of priority habitats, ecological networks and the protection and recovery of priority species as identified under the Natural Environment and Rural Communities Act (2006). Local Planning Authorities will seek to produce a net gain in biodiversity, by requiring developers to design wildlife into their plans and to ensure that any unavoidable impacts are appropriately mitigated for. The NPPF 2021 version replaces the first NPPF published in March 2012 and includes minor clarifications to the revised versions published in 2018 and 2019.

**The natural choice: securing the value of nature (2011) (Natural Environment White Paper)**

This White Paper outlines the Governments vision for the future of landscape and ecosystem services.

**UK Post-2010 Biodiversity Framework, 2012**

The 'UK Post-2010 Biodiversity Framework', published in July 2012, succeeds the UK BAP and 'Conserving Biodiversity – the UK Approach', and is the result of a change in strategic thinking.

**Biodiversity 2020**

This is a national strategy for England's wildlife and ecosystem services based on the White Paper.

**European Red Data lists (IUCN, 2000)**

International Union for Conservation of Nature (IUCN and the European Commission have been working together on an initiative to assess around 6,000 European species according to IUCN regional Red Listing Guidelines. Through this process they have produced a European Red List identifying those species which are threatened with extinction at the European level so that appropriate conservation action can be taken to improve their status.

**Appendix C. Optimum Protected Species Survey Times**

<b>BATS</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Bat Scoping	█											
Bat Emergence	█											
Bat Activity	█											
Bat Hibernation	█											

<b>BIRDS</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Birds Breeding	█											
Birds -Other	█											

<b>GREAT CRESTED NEWTS</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
GCN - Habitat Assessment	█											
GCN - Presence / Absence	█											
eDNA – Survey	█											

<b>AQUATIC ANIMALS</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
Water Vole	█											
White Clawed Crayfish	█											
Otter	█											

<b>DORMOUSE</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	█											

<b>REPTILE</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	█											

<b>BADGER</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
	█											


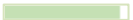
<b>Phase 1 Ecological Survey</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

<b>Botany</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

<b>Tree Survey BS5837 -2012</b>	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec

Dark Green = Approximate Optimal Survey Period  Light Green = Approximate Sub-Optimal Survey Period. 

Owing to the vagaries of the English climate and the seasonal variation between different parts of the Country, the optimal Survey period might vary by several weeks from this calendar. This should be borne in mind when determining Planning Applications

## Appendix D. Assessing the Potential Value for Buildings for Roosting Bats Survey Method of Buildings.

Where appropriate, the building exteriors and interiors are searched visually, using binoculars, for field evidence of bats, with particular attention being paid to sheltered areas such as window ledges and pipes where bat droppings might lie undisturbed from the weather, insect prey remains, urine stains, oil stains from bats repeatedly moving over a small area and polishing the surface, and the potential presence of bats either dead or alive.

### Classification Criteria

It should be noted that the grading system below only reports on the situation at the time of survey; should bat activity levels change after the initial survey, or should the buildings be modified (for example if roof tiles are removed or fascia boards develop cracks), the category may need revision.

Category (Potential value)	Description
<b>Please note: Intermediate categories (e.g. Low – Moderate value) may apply.</b>	
<b>No/Negligible value</b>	Buildings with no or very few features capable of supporting roosting bats. Often buildings are of 'sound' well- sealed structure or have a single skin and no roof void. They tend to have high interior light-levels, and little or no insulation. Buildings without any roofs may also fall into this category.
<b>Low value</b>	Buildings of largely unsuitable construction, but with a few features of potential value to bats (e.g. gaps above windows, apparently shallow crevices). No supporting evidence (e.g. droppings / staining) found. Buildings may be surrounded by poor or sub-optimal bat foraging habitat, as is often the case in urban-centre locations.
<b>Moderate value</b>	Buildings usually of brick or stone construction with a number of features of obvious potential value to roosting bats e.g. loose roof / ridge tiles, gaps in brickwork, gaps under fascia boards, and/or warm sealed roof-spaces with under-felt.
<b>High value</b>	Buildings with a large number of features of obvious potential value to bats (as above). Bats may be suspected to roost within the building (at least at certain times of year), but no supporting evidence found.

<b>Confirmed roost</b>	Bats discovered roosting within the building or recorded emerging from / entering the building at dusk and / or dawn. Building found to contain conclusive evidence of occupation by bats, such as bat droppings. A confirmed record (as supplied by an established source such as the local bat group) would also apply to this category.
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## Appendix E. Bat Activity and Bat Emergence Survey Information

### Survey Method of Buildings.

Where appropriate, the building exteriors and interiors are searched visually, using binoculars, for field evidence of bats, with particular attention being paid to sheltered areas such as window ledges and pipes where bat droppings might lie undisturbed from the weather, insect prey remains, urine stains, oil stains from bats repeatedly moving over a small area and polishing the surface, and the potential presence of bats either dead or alive.

### BCT Tree Categories 2016

-  **1\*** - Tree with multiple, highly suitable features capable of supporting larger roosts.
-  **1** - Tree with definite potential, supporting fewer suitable features than Category 1\* trees or capable of supporting roosts for single/low numbers of bats.
-  **2** - Tree with no obvious potential for roosting bats although due to its size and maturity the tree may support some features with limited potential to support bats.
-  **3** - Tree with no roosting potential.

### Development and Planning Trigger for Bat Surveys

#### Bat Emergence

The Emergence Surveys are required to confirm the species, extent of use (in terms of numbers of bats), type of bat use (in terms of seasonality and functionality of use) and bat access points. These details are required to ascertain the requirement for a Natural England EPSL and to provide the information **required by Natural England should** an application prove necessary.

It is dependent upon the results of Emergence Surveys as to whether Natural England (NE) European Protected Species Licences (EPSL) will be required prior to any construction work commencing. Protected Species surveys, such as bat emergence surveys, cannot be conditioned by the LPA and must be completed prior to Planning Applications being determined. Bat Conservation Trust (BCT) guidelines recommend the level of Bat Emergence Surveys required for each circumstance.

Development and planning trigger list for bat surveys, which can be adapted to local circumstances, taken from the Association for Local Government Ecologists (ALGE) template for biodiversity and geological conservation validation checklists 2007, available from <http://alge.org.uk/publications/index.php>

(1) **Conversion, modification, demolition or removal of buildings (including hotels, schools, hospitals, churches, commercial premises and derelict buildings) which are:**

- Agricultural buildings (e.g. farmhouses, barns and outbuildings) of traditional brick or stone construction and/or with exposed wooden beams;
- Buildings with weather boarding and/or hanging tiles that are within 200m of woodland and/or water;
- Pre-1960 detached buildings and structures within 200m of woodland and/or water;
- Pre-1914 buildings within 400m of woodland and/or water;
- Pre-1914 buildings with gable ends or slate roofs, regardless of location;

<ul style="list-style-type: none"> <li>➤ Located within, or immediately adjacent to woodland and/or immediately adjacent to water;</li> <li>➤ Dutch barns or livestock buildings with a single skin roof and board-and-gap or Yorkshire boarding if, following a preliminary roost assessment, the site appears to be particularly suited to bats.</li> </ul>
<p>(2) <b>Development affecting built structures:</b></p> <ul style="list-style-type: none"> <li>➤ Tunnels, mines, kilns, ice-houses, adits, military fortifications, air-raid shelters, cellars and similar underground ducts and structures; unused industrial chimneys that are unlined and brick/stone construction;</li> <li>➤ Bridge structures, aqueducts and viaducts (especially over water and wet ground).</li> </ul>
<p>(3) <b>Floodlighting of</b></p> <ul style="list-style-type: none"> <li>➤ Churches and list buildings, green space (e.g. sports pitches) within 50m of woodland, water, field hedgerows or lines of trees with connectivity to woodland or water;</li> <li>➤ Any building meeting the criteria listed in (1) above.</li> </ul>
<p>(4) <b>Felling, removal or lopping of:</b></p> <ul style="list-style-type: none"> <li>➤ Woodland;</li> <li>➤ Field hedgerows and/or lines of trees with connectivity to woodland or water bodies;</li> <li>➤ Old and veteran trees that are more than 100 years old;</li> <li>➤ Mature trees with obvious holes, cracks or cavities, or that are covered with mature ivy (including large dead trees).</li> </ul>
<p>(5) <b>Proposals affecting water bodies:</b></p> <ul style="list-style-type: none"> <li>➤ In or within 200m of rivers, streams, canals, lakes, reed beds or other aquatic habitats.</li> </ul>
<p>(6) <b>Proposal located in or immediately adjacent to:</b></p> <ul style="list-style-type: none"> <li>➤ Quarries or gravel pits;</li> <li>➤ Natural cliff faces and rock outcrops with crevices or caves and swallets.</li> </ul>
<p>(7) <b>Proposals for wind farm developments</b></p> <ul style="list-style-type: none"> <li>➤ of multiple wind turbines and single wind turbines (depending on the size and location) (NE TIN 051 – undergoing updates at the time of writing)</li> </ul>
<p>(8) <b>All proposals in sites where bats are known to be present<sup>1</sup></b></p> <ul style="list-style-type: none"> <li>➤ This may include proposed development affecting any type of buildings, structures, features or location.</li> </ul>
<p><b>Notes:</b></p> <p>1. Where sites are of international importance to bats, they may be designated as SACs. Developers of large sites 5-10km away from such SACs may be required to undertake a HRA.</p>

### BCT Emergence and Activity Guidelines

<b>Bat Emergence Survey Requirements</b>		
Extracted from - Table 7.3 & 7.1 BCT Recommended Minimum Survey Effort		
<b>Low Roost Suitability</b>	<b>Moderate Roost Suitability</b>	<b>High / Confirmed roost Suitability</b>

One Survey visit – One dusk or dawn re-entry survey	Two separate survey visits – One dusk and one dawn re-entry survey	Three separate survey visits – at least one must be a dawn re-entry and one a dusk emergence, the other can be either.
Structures that have been categorized as low potential can be problematic and the number of surveys required should be judged on a case by case basis. If there is a possibility that quiet calling, late emerging species are present then a dawn survey may be more appropriate, providing weather conditions are suitable. In some cases, more than one survey may be needed, particularly where there are several buildings in this category. Multiple survey visits should be spread out to sample as much of the recommended survey period as possible, it is recommended that surveys are spaced at least two weeks apart, preferably more. A dawn survey immediately after a dusk one is considered only one visit.		
<b>EMERGENCE – RE-ENTRY Survey Dates</b>		
May to August (structures) No further survey required (trees)	May to September with at least one between May and August	May to September with at least two, between May and August
September surveys are both weather and location dependent. Conditions may become unsuitable in these months, particularly in more northerly latitudes, which may reduce the length of the survey season. Multiple survey visits should be spread out as much as possible; it is recommended that surveys are spaced at least two weeks apart, preferably more, unless there are specific ecological reasons for the surveys to be closer together (for example a more accurate count of a maternity colony is required but it is likely that the colony will soon disperse) if there is potential for a maternity colony then consideration must be given to detectability. A survey on 31 <sup>st</sup> august followed by a mid-September survey is unlikely to pick up a maternity colony. An ecologist should use their professional judgement to design the most appropriate survey regime.		

<b>Bat Activity Survey Requirements</b>		
Extracted from - Table 8.3. BCT Recommended Minimum Survey Effort.		
Transect/spot count/timed search surveys		
<b>Low Habitat Value</b>	<b>Moderate Habitat Value</b>	<b>High / Confirmed Habitat Value</b>
One Survey visit per season (Spring- April/May, summer- June/July/August, autumn- September/October) in appropriate weather conditions for bats. Further surveys may be required if these survey visits reveal higher levels of bat activity than predicted by habitat alone.	One survey visit per month (April to October) in appropriate weather conditions for bats. At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24 hr period.	Up to two survey visits per month (April to October) in appropriate weather conditions for bats. At least one of the surveys should comprise dusk and pre-dawn (or dusk to dawn) within one 24hr period.
Automatic / static bat detector surveys		

<p>One location per transect, data to be collected on five consecutive nights per season (spring- April/May; summer- June/July/August; autumn- September/ October) in appropriate weather conditions for bats.</p>	<p>Two locations per transect, data to be collected on five consecutive nights per month (April to October) in appropriate weather conditions for bats.</p>	<p>Three locations per transect; data to be collected on five consecutive nights per month (April to October) in appropriate weather conditions for bats)</p>
<p><b>Refer to BCT guidelines document Table 8.3 for further details and dependent conditions where the survey effort is not straightforward.</b></p>		

**Appendix F. Wildlife Crime**

<http://www.nwcu.police.uk/what-is-wildlife-crime/>

In general, wildlife crime is any action which contravenes current legislation governing the protection of the UK's wild animals and plants.

A wildlife crime may also be reported and recorded where advice has been given regarding the potential or actual presence of a protected species within a habitat with that habitat then removed/impacted causing actual disturbance/harm/death to that species. Examples in relation to this report may be seasonally pertinent but could include cutting back or removal of a hedgerow where birds and dormice are nesting; removing or doing works to trees where bats roost; cutting grass where reptiles such as slow-worms are inhabiting; filling in or blocking access to badger setts. Specific legislation should be referred to regarding the protection of any animal species or habitat.

## **Appendix G. Habitats Regulation Assessment (HRA)**

Appropriate assessment (or 'Habitats Regulation Assessment', HRA) is one of the most powerful tools currently available to control the environmental impacts of development. Whereas sustainability appraisal is a decision-informing tool, appropriate assessment is often described as a decision-making tool because has the potential to stop development.

Appropriate assessment tests whether a plan or a project is likely to have a significant negative impact on any:

- Special Protection Area (SPA) – a European designation which protects birds
- Special Area of Conservation (SAC) – a European designation which protects habitats
- RAMSAR site – a European designation which protects wetlands.

Jointly, these are called 'European sites'. Appropriate assessment does not apply to other designations, like Sites of Special Scientific Interest (SSSI) or Areas of Outstanding Natural Beauty (AONB).

If the proposed development has the potential to impact up on any of the European sites, the LPA can request an HRA be conducted. The responsibility for conducting such an HRA lies with the LPA, but they can insist that all relevant information is provided to them by the developer.

Proximity to a site is not the defining factor, potential 'impact' is, and for large projects this could be up to 15km from the site. The closer to a protected site, the more likely it is that an HRA will be required, even for a very small site.

## Appendix H. Ecological Constraints and Opportunities Plan

